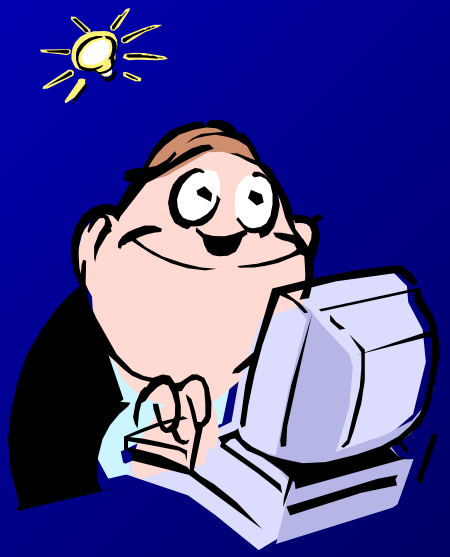
POLITEC PRESENTATION
NAVY - RIC
4/10/2001

“applied imagination”

“Interesting novelty, but it has no commercial possibilities….”

J.P. Morgan to Alexander Bell (1876)



Presented by:

Politec

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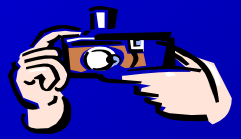
Politec Profile

- 30 year old international organization
- 3,000 employees
- Over $150 m annual revenue (2000)
- ISO9000 Certified
- Areas of Expertise

  - Compression
  - Biometrics
  - Document Management/Imaging/COLD
  - Forms Processing
  - Workflow Technology

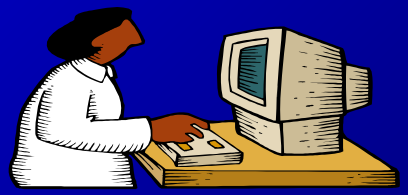
New Compression Technology for



- Images (Color & B/W),

- Voice,

- Audio,
- Full-Motion Video,



- Database Storage,

- Transportable Storage.

"640K ought to be enough for anybody."

Bill Gates (1981)

Compression Technologies

Fractal

- Patterns, not original image, are analyzed
- Difficult to compress
- Fast Decompression (from the equations)
- Scalability (interpolates but with errors, distortion)
- discrete cosine transformer

Wavelets

- Fourier Math,
- High/Low pass,
- No color edges or color on color
- Goes up to 150:1 quality,
- Uses error tolerant bit-stream
- Discrete cosine transformer

JPEG

- adjustable, best lossless under 5:1
- discrete cosine transformer;
- leftover is Huffman encoded,
- blocks artifacts above 30:1,

and now,
TEMPORAL DIFFERENCIAL ENCODING !

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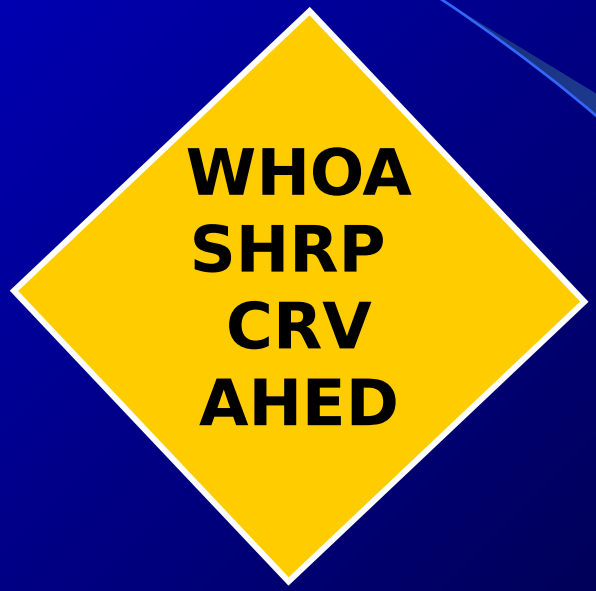
How This Compression Technology Works

Original File Contains

22 Characters



Typical Modification with JPEG, Fractals, or Wavelets

15 Characters

Neural Symbolic Pattern Matching

1 Symbol

"Everything that can be invented has been invented."

Charles Duell--Commissioner of U.S. Patent Office (1899)

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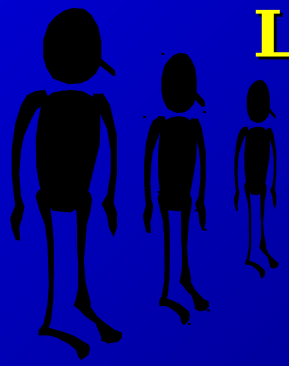
Imagination

Temporal Differential Encoding™ :

a Compression Performance Breakthrough in Bandwidth and Storage Throughput!



- **Images** **4 to 20:1** **LossLess**
  - **100 to 500:1** **Visually Loss**
  - **1000 to 4000:1** **Lossy, Video**
- **Video** **100 to 4000:1** **Lossy**
- **Text** **8 to 16:1** **LossLess**
- **Audio** **10 to 100:1** **Lossy.**

GE rejected a machine to wash clothes invented by Bendix.
(1946)

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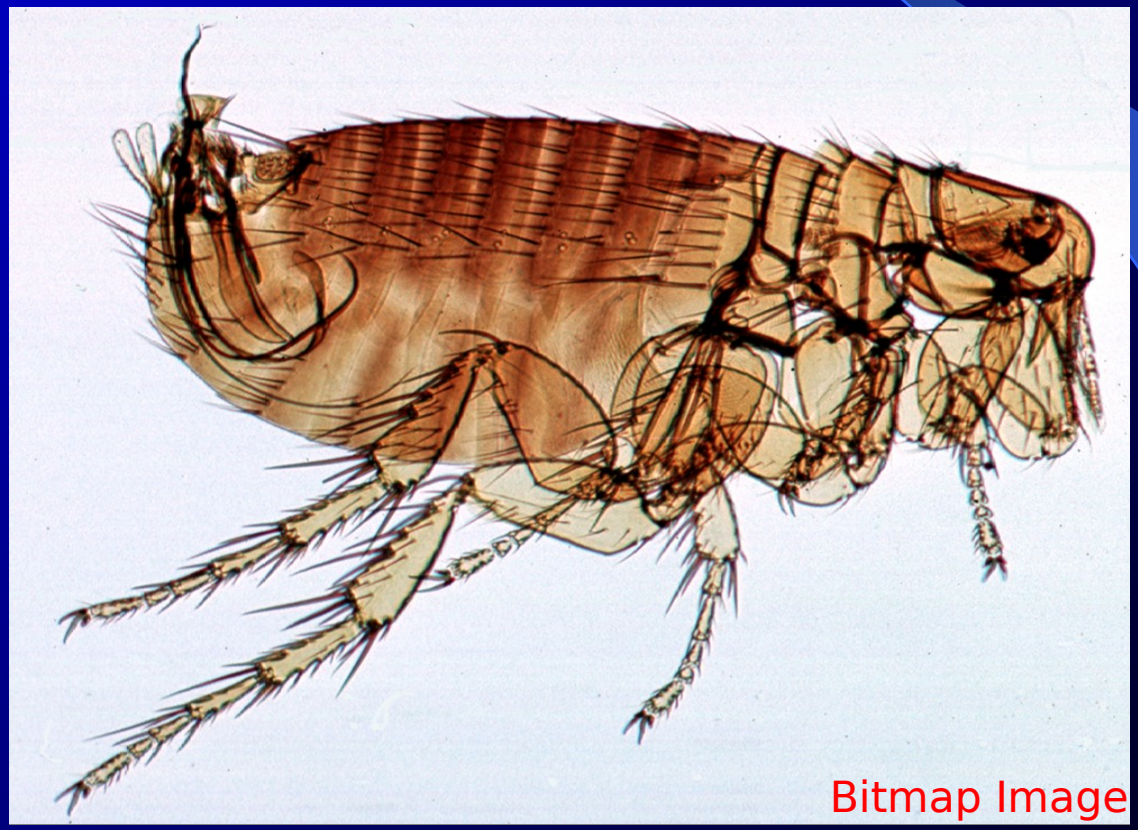
FULL SEQUENCE

Phase 1. Create File and Specifications

1. Open .exe software file. Pre-encrypted character map for security; create log register.

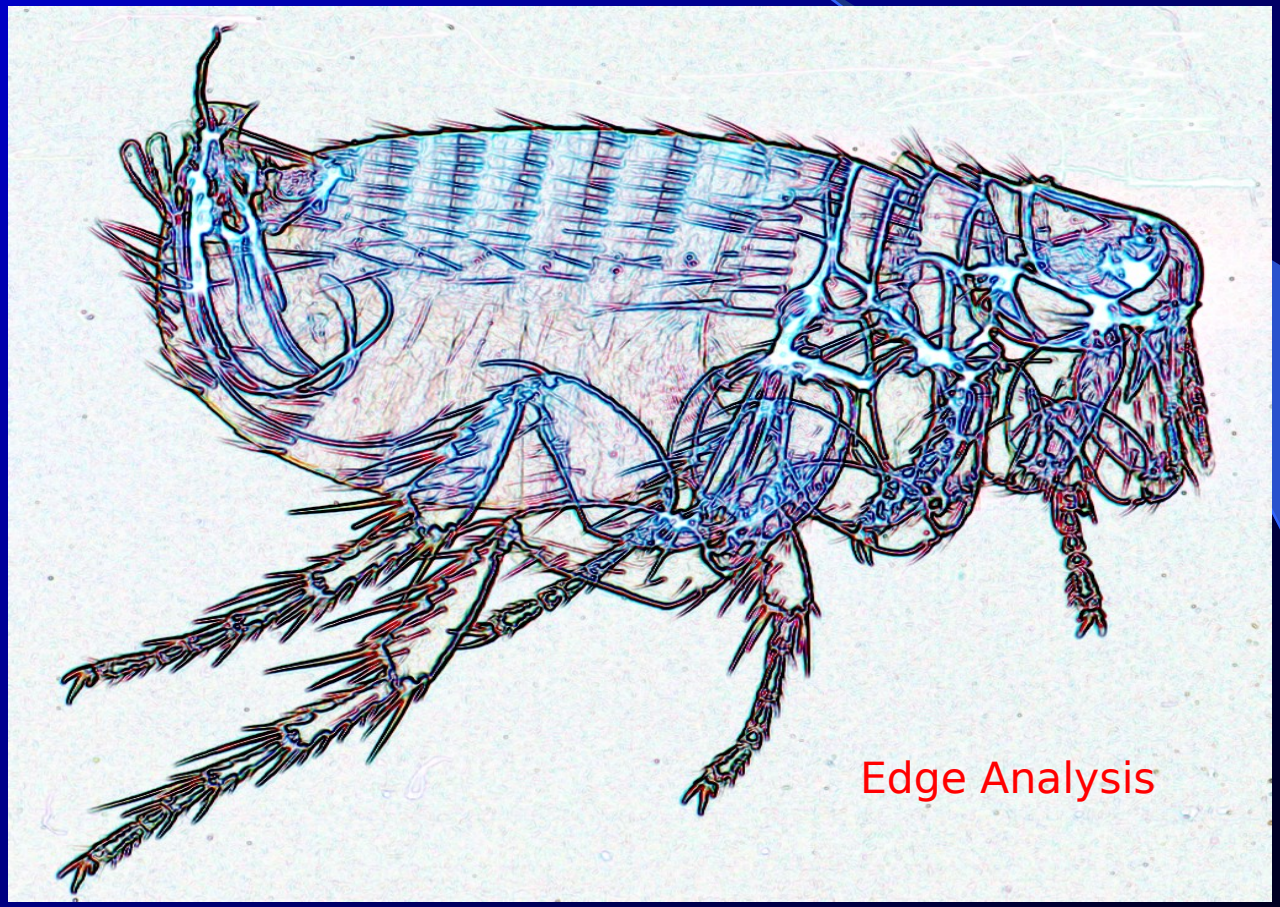
2. Open a bitmap/tiff file (WINTEL compatible). Calibrate screen size and format.

3. Run palette analysis (color or grayscale).



Phase 2. First Processing of File and Specifications

4. Pattern generation (edge analysis).

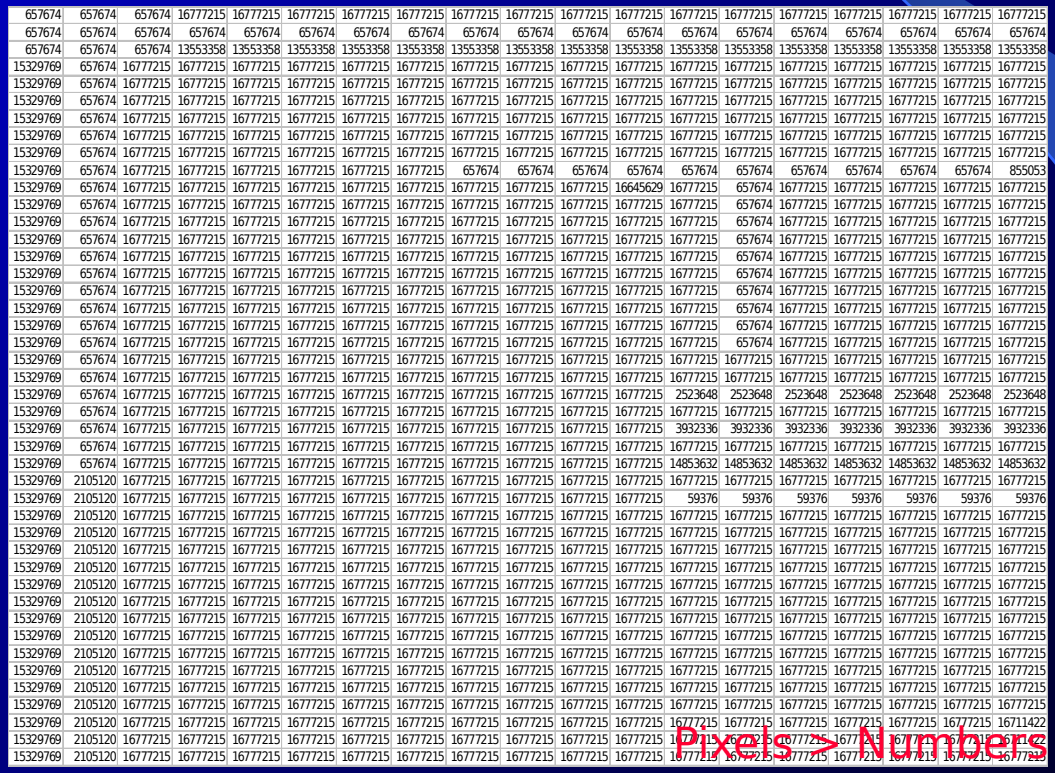


Phase 3. Second Processing of File and Specifications

5. Apply neural net formula (algorithm).

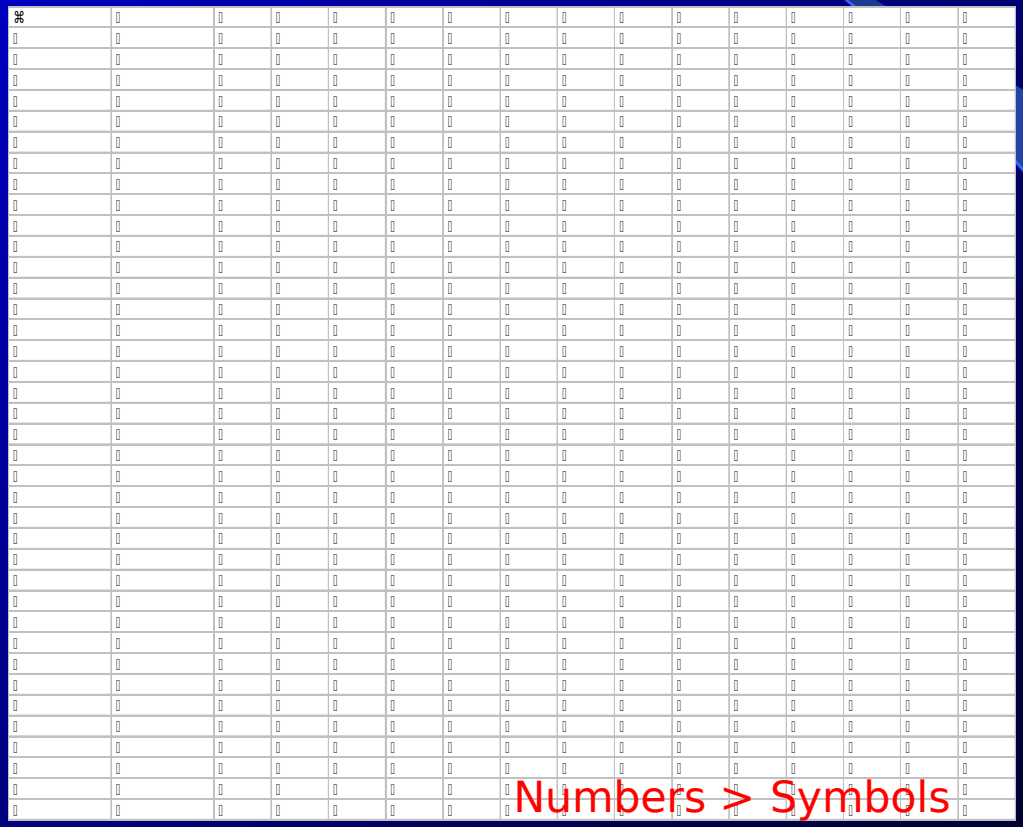
6. Converts pixels or groups of pixels displayed as weighted values in numeric format against an AI rule set.

Lossless/Lossy via allowed error factor; then trainable for desired parameters.



Phase 4. Third Processing of File and Specifications

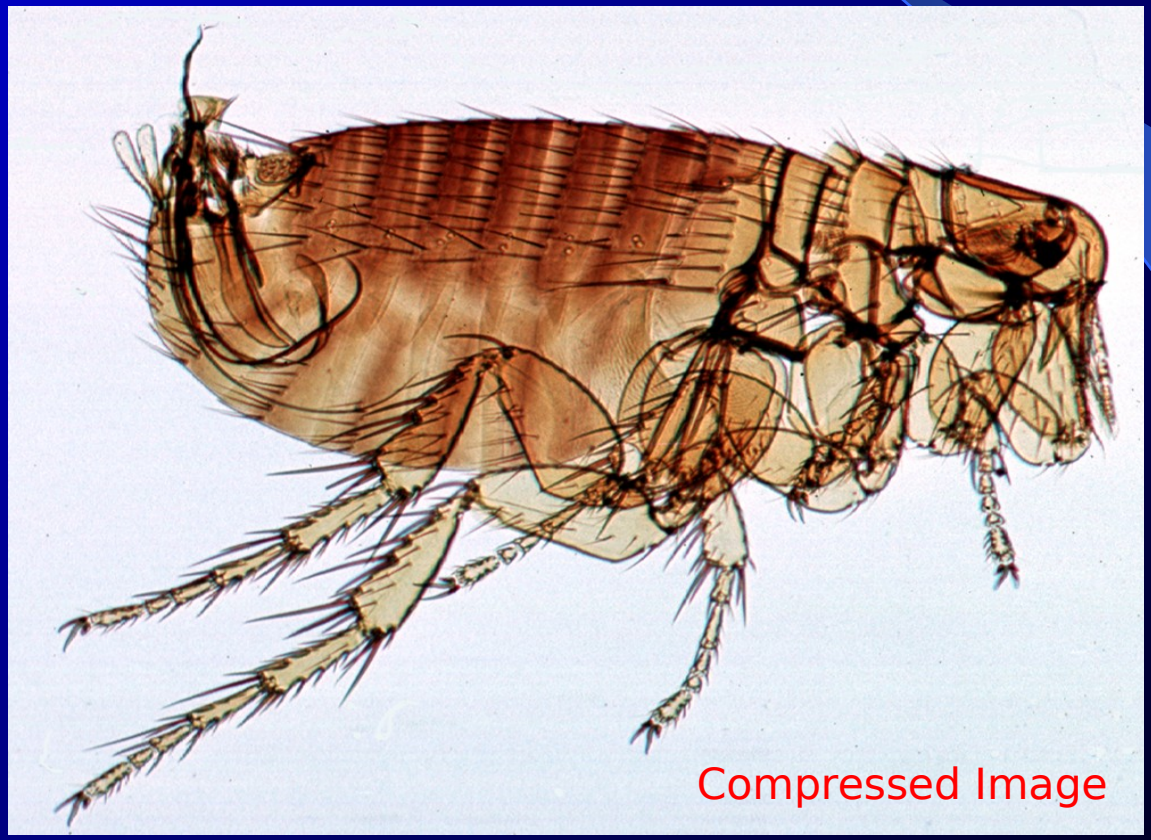
7. Convert numbers to ***symbols*** that are generated by a neural net predictor. **Uses only 10 different symbols to represent an image**. Is not a library. File is bit-summed. Header is constructed. **Cannot be copied**: Metered usage provides *better security than banking or wire transactions*.



Numbers > Symbols

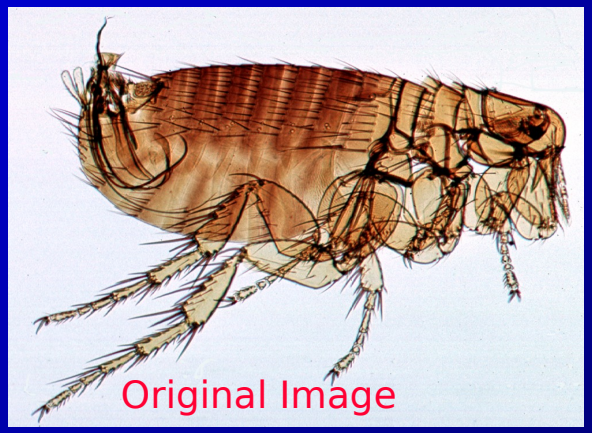
Phase 5. Final Processing of File and Specifications

8. Save file.
9. Display to screen.
10. Takes longer to write to disk than to compress.



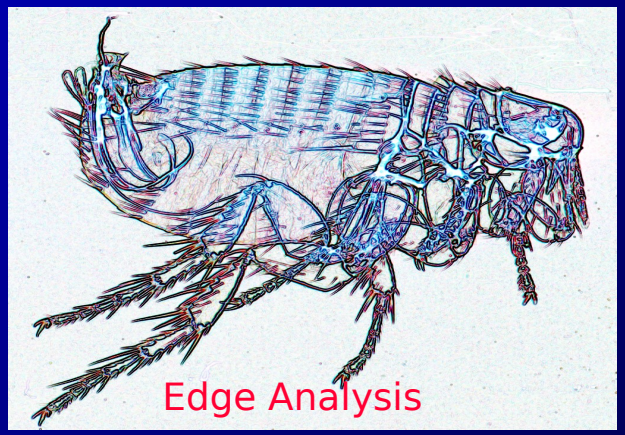
File Sizes for Flea Images

(All Include DB Data)



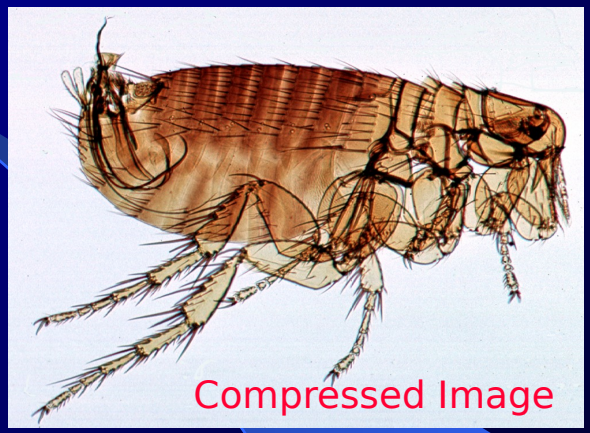
Original Flea

24,339,512 = 1:1



Edges Visually LossLess

40,659 = 598:1



Visually LossLess

7,533 = 3231:1

"Heavier-than-air machines will never fly."

Lord Kelvin (1895)

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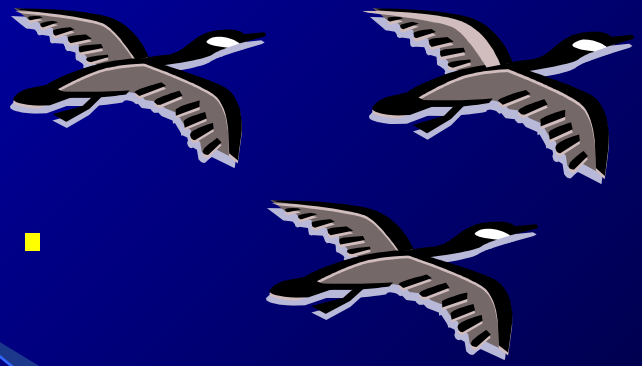


Going Forward....

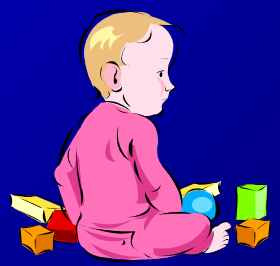
Migration Path

16 bit → 32 bit 64 bit 128 bit

(larger # ➳ less error ➳ greater compress ➳ fewer symbols)

RGB CYMK IR thru UV ___

From Trigonometry (cos/r) To Geometry (no/



Market Standard

Cosine in *blocks* for a screen.

OUR STANDARD

Whole screen is one item.

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Thank You
And now for the Demo !

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